

In The Claims:

Please cancel claims 1-17, 21-41, 45-62, 66-72, 76-81, 85-90 and 94-96 without prejudice, and amend claims 18, 42, 63, 73, 82 and 91, so that the claims hereafter read as follows:

1. - 17. (Canceled)

18. (Currently Amended) A system ~~according to claim 17~~
for amplifying optical signals comprising:

an optical fiber for carrying the optical signals;

a high power broadband light source comprising an optical component configured to generate amplified spontaneous emission (ASE) having a relatively short coherence length; and

a connector for introducing the high power broadband light source into the optical fiber as a Raman pump so as to induce Raman amplification of the optical signals within the fiber;

wherein the high power broadband light source is spectrally filtered so as to provide a desired spectral distribution for the Raman pump;

wherein the spectrally filtered high power broadband light source comprises a spectrally filtered amplified spontaneous emission (ASE) generated from an optical component;

wherein the optical component comprises a plurality of ASE sources having their outputs combined together so as to form a composite ASE source;

wherein the optical component comprises an optical waveguide comprising a wavelength seed section for generating ASE and a power booster section for amplifying the ASE;

and wherein the wavelength seed section comprises a plurality of separate wavelength seed subsections arranged in a serial configuration, and further wherein each of the wavelength seed subsections is arranged to produce ASE in a particular wavelength range.

19. (Original) A system according to claim 18 wherein the wavelength seed section is disposed between the power booster section and a high reflectance mirror, and further wherein the high reflectance mirror is configured to provide the desired ASE spectrum at the input to the power booster section.

20. (Original) A system according to claim 19 wherein the high reflectance mirror comprises at least one element selected from the group consisting of a thin film coating and a distributed Bragg reflector.

21. - 41. (Canceled)

42. (Currently Amended) A method ~~according to claim 41~~ for amplifying optical signals comprising:

introducing a high power broadband light source into an optical fiber carrying the optical signals so that the high power broadband light source acts as a Raman pump so as to induce Raman amplification of the optical signals within the fiber,

wherein the high power broadband light source comprises an optical component configured to generate amplified spontaneous emission (ASE) having a relatively short coherence length;

wherein the high power broadband light source is spectrally filtered so as to provide a desired spectral distribution for the Raman pump;

wherein the spectral filtering is achieved using a Bragg grating;

wherein the optical component comprises an optical waveguide comprising a wavelength seed section for generating ASE and a power booster section for amplifying the ASE;

and wherein the wavelength seed section comprises a plurality of separate wavelength seed subsections arranged in a serial configuration, and further wherein each of the wavelength seed subsections is arranged to produce ASE in a particular wavelength range.

43. (Original) A method according to claim 42 wherein the wavelength seed section is disposed between the power booster section and a high reflectance mirror, and further wherein the high reflectance mirror is configured to provide the desired ASE spectrum at the input to the power booster section.

44. (Original) A method according to claim 43 wherein the high reflectance mirror comprises at least one element selected from the group consisting of a thin film coating and a distributed Bragg reflector.

45. - 62. (Canceled)

63. (Currently Amended) A spectrally filtered high power broadband light source ~~according to claim 62~~ comprising an optical component configured to generate a spectrally filtered

amplified spontaneous emission (ASE) having a relatively short coherence length;

wherein the optical component comprises a plurality of ASE sources having their outputs combined together so as to form a composite ASE source;

wherein the optical component comprises an optical waveguide comprising a wavelength seed section for generating ASE and a power booster section for amplifying the ASE;

and wherein the wavelength seed section comprises a plurality of separate wavelength seed subsections arranged in a serial configuration, and further wherein each of the wavelength seed subsections is arranged to produce ASE in a particular wavelength range.

64. (Original) A spectrally filtered high power broadband light source according to claim 63 wherein the wavelength seed section is disposed between the power booster section and a high reflectance mirror, and further wherein the high reflectance mirror is configured to provide the desired ASE spectrum at the input to the power booster section.

65. (Original) A spectrally filtered high power broadband light source according to claim 64 wherein the high reflectance mirror comprises at least one element selected from the group consisting of a thin film coating and a distributed Bragg reflector.

66. - 72. (Canceled)

73. (Currently Amended) A system ~~according to claim 72~~ for amplifying optical signals comprising:

an optical fiber for carrying the optical signals;
a high power broadband light source; and
a connector for introducing the high power broadband light source into the optical fiber as a Raman pump so as to induce Raman amplification of the optical signals within the fiber,
wherein the high power broadband light source is spectrally filtered so as to provide a desired spectral distribution for the Raman pump,

wherein the spectrally filtered high power broadband light source comprises a spectrally filtered amplified spontaneous emission (ASE) generated from an optical component,

wherein the optical component comprises a plurality of ASE sources having their outputs combined together so as to form a composite ASE source,

and wherein the optical component comprises an optical waveguide comprising a wavelength seed section for generating ASE and a power booster section for amplifying the ASE;

and wherein the wavelength seed section comprises a plurality of separate wavelength seed subsections arranged in a serial configuration, and further wherein each of the wavelength seed subsections is arranged to produce ASE in a particular wavelength range.

74. (Previously Presented) A system according to claim 73 wherein the wavelength seed section is disposed between the power booster section and a high reflectance mirror, and further wherein the high reflectance mirror is configured to provide the desired ASE spectrum at the input to the power booster section.

75. (Previously Presented) A system according to claim 74 wherein the high reflectance mirror comprises at least one element selected from the group consisting of a thin film coating and a distributed Bragg reflector.

76. - 81. (Canceled)

82. (Currently Amended) A method ~~according to claim 81~~ for amplifying optical signals comprising:

introducing a high power broadband light source into an optical fiber carrying the optical signals so that the high power broadband light source acts as a Raman pump so as to induce Raman amplification of the optical signals within the fiber,

wherein the high power broadband light source is spectrally filtered so as to provide a desired spectral distribution for the Raman pump,

wherein the spectral filtering is achieved using a Bragg grating,

and wherein the optical component comprises an optical waveguide comprising a wavelength seed section for generating ASE and a power booster section for amplifying the ASE;

and wherein the wavelength seed section comprises a plurality of separate wavelength seed subsections arranged in a serial configuration, and further wherein each of the wavelength seed subsections is arranged to produce ASE in a particular wavelength range.

83. (Previously Presented) A method according to claim 82 wherein the wavelength seed section is disposed between the power

booster section and a high reflectance mirror, and further wherein the high reflectance mirror is configured to provide the desired ASE spectrum at the input to the power booster section.

84. (Previously Presented) A method according to claim 83 wherein the high reflectance mirror comprises at least one element selected from the group consisting of a thin film coating and a distributed Bragg reflector.

85. - 90. (Canceled)

91. (Currently Amended) A spectrally filtered high power broadband light source ~~according to claim 90~~ comprising a spectrally filtered amplified spontaneous emission (ASE) generated from an optical component,

wherein the optical component comprises a plurality of ASE sources having their outputs combined together so as to form a composite ASE source,

and wherein the optical component comprises an optical waveguide comprising a wavelength seed section for generating ASE and a power booster section for amplifying the ASE;

and wherein the wavelength seed section comprises a plurality of separate wavelength seed subsections arranged in a serial configuration, and further wherein each of the wavelength seed subsections is arranged to produce ASE in a particular wavelength range.

92. (Previously Presented) A spectrally filtered high power broadband light source according to claim 91 wherein the wavelength seed section is disposed between the power booster

section and a high reflectance mirror, and further wherein the high reflectance mirror is configured to provide the desired ASE spectrum at the input to the power booster section.

93. (Previously Presented) A spectrally filtered high power broadband light source according to claim 92 wherein the high reflectance mirror comprises at least one element selected from the group consisting of a thin film coating and a distributed Bragg reflector.

94. - 96. (Canceled)